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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,608	03/02/2005	Andreas Lucht	AFK-16214-WO-US	8772
30/996 7590 06/29/2009 ROBERT W. BECKER & ASSOCIATES 707 HIGHWAY 333 SUITE B TIJERAS, NM 87059-7507				
EXAMINER				
HAUGLAND, SCOTT J				
ART UNIT		PAPER NUMBER		
3654				
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06/29/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/522,608

**Applicant(s)**

LUCHT ET AL.

**Examiner**

SCOTT HAUGLAND

**Art Unit**

3654

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-20 and 22-32 is/are pending in the application.
- 4a) Of the above claim(s) 23-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20, 22 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

Claims 23-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/28/08.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-20, 22, and 28-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 17, lines 15-16 includes new matter because the application as originally filed does not disclose that the spiral toothing is fixedly disposed on the carrier shaft.

***Claim Rejections - 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17, 22, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandez (U.S. Pat. No. 5,005,777) in view of Burr et al (U.S. Pat. No. 4,217,788).

Fernandez discloses a belt shaft retractor having a blocking system (including portions of control system 28) and a tensioning device comprising: a spiral toothing 54 that is meshed with an external toothing 52 of the belt shaft 41, a fixed counter-bearing 16, and an electric motor 26. The spring 58 and brush holder 56 inherently increase friction due to increased pressure as the spring is compressed.

Fernandez does not disclose that the spiral toothing is not self-locking.

Burr et al teaches providing a spiral toothing 24 that is not self-locking for driving a gear 41. A brake 32 supplies resistance to prevent back-driving of the spiral toothing

24, allowing for worm and gear sets having different gear ratios. The spiral toothing is fixedly disposed on the a carrier shaft 23.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the belt retractor of Fernandez with spiral toothing that is not self-locking as taught by Burr et al to accommodate other gear ratios or gear sizes.

The spiral toothing 54 is fixed against rotation on the carrier shaft 18 and appears to be fixedly disposed on the carrier shaft to the extent that the spiral toothing in applicants' device is.

Assuming, arguendo, that the spiral toothing 54 is not fixedly disposed on the carrier shaft, it would have been obvious to one having ordinary skill in the art at the time the invention was made to fixedly dispose the spiral toothing on the carrier shaft as taught by Burr et al to support the spiral toothing.

With regard to claim 22, the coefficient of friction of the spring 58 and brush holder are inherently non-linear in some range of pressures.

With regard to claims 28, inherent friction in the motor would provide a holding moment and the motor is capable of being energized to apply a holding moment to prevent rotation of the spiral toothing against at least some loads.

With regard to claim 29, the motor control in 28 adjusts the holding moment generated by the motor as a function of the load on the belt shaft (e.g., note col. 8, lines 30-50).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandez in view of Burr et al as applied to claim 17 above, and further in view of Kanada et al (U.S. Pat. No. 4,546,933).

Fernandez does not disclose miter-wheel gearing coupling a drive shaft of the electric motor to the spiral toothing.

Kanada et al teaches coupling a motor and spiral toothing in a seat belt retractor via miter-wheel gearing 42, 44.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Fernandez with miter-wheel gearing coupling a drive shaft of the electric motor to the spiral toothing as taught by Kanada et al to permit a more compact arrangement of the motor parallel to the belt shaft.

Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandez in view of Burr et al and Kanada et al as applied to claim 20 above, and further in view of Andrei-Alexandru et al (U.S. Pat. No. 4,652,781).

Fernandez does not explicitly disclose that there is a thrust bearing surrounded by a bearing housing between the spiral toothing 54 and gear 20 end of the carrier shaft 18.

Andrei-Alexandru et al teaches mounting a carrier shaft for a spiral toothing in a ball joint bearing (16, 17) in a bearing housing.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Fernandez with a ball joint or cup-shaped bearing in a

bearing housing formed by the seat belt retractor frame as taught by Andrei-Alexandru et al to support the carrier shaft 18 between spiral toothing 54 and gear 20 in a self-aligning manner.

### ***Response to Arguments***

Applicants' arguments filed 4/9/09 have been fully considered but they are not persuasive.

Applicants argue that the spiral toothing is either formed as one-piece on the carrier shaft or can be fixedly connected to the carrier shaft as a separate component (e.g., with a press fit). However, there is no disclosure that the spiral toothing is fixedly disposed on the carrier shaft as claimed in claim 17. The written description is not specific when interpreted in light of the drawings and the disclosed mode of operation of the apparatus. The spiral toothing is clearly not formed as one-piece on the carrier shaft as shown in the drawings, so the term "formed on" on line 2 of original claim 4, must be interpreted accordingly. The term "connected to" mentioned in applicants' remarks is less specific than "mounted on". The device could be made to operate with the spiral toothing fixed to carrier shaft or axially slidable on it. Some play in the mechanism is necessary in order to obtain the disclosed operating characteristics. I.e., the spiral toothing must not be constrained by shaft 18, bearing 21, bearing 22, etc. in such a way as to prevent the disclosed braking effect from occurring.

Applicants argue that there is no motivation to combine Burr with Fernandez, that such a combination would not lead to the applicants' invention, and that the combination

makes no sense technically since Fernandez discloses axial displaceability of the spiral toothing while Burr is concerned with preventing reverse rotation of the carrier shaft. However, the fact that the references are directed to different inventions does not render their combination unobvious. Burr teaches how to prevent back-driving of a worm gear to allow the use of a worm gear that is not self-locking where a self-locking one would otherwise be required. These teachings directly relate to the self-locking worm gear in Fernandez and suggest replacement of that worm gear with the worm gear mechanism taught by Burr to allow for other gear ratios. The device of Fernandez would be operable when modified to use a non-self-locking worm gear as suggested by Burr.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT HAUGLAND whose telephone number is (571)272-6945. The examiner can normally be reached on Mon. - Fri., 10:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Q. Nguyen can be reached on (571) 272-6952. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Q. Nguyen/  
Supervisory Patent Examiner, Art Unit 3654

/SJH/  
6/26/09